

**The listing of claims presented below replaces all prior versions and listing of claims in the application.**

**Listing of claims:**

1. (Currently amended) A method for hydrogen sulphide and/or mercaptans decomposition producing hydrogen and sulphur from a gas containing hydrogen sulphide and/or a mercaptan, said method comprising passing hydrogen sulphide and/or mercaptans containing said gas at a temperature lower than 200°C, than 150°C through a layer of a solid material capable to decompose of decomposing hydrogen sulphide and/or mercaptans with isolation of hydrogen or hydrocarbons and formation of sulfur-containing compounds on the surface of the material, characterized in that said solid material is placed in the a layer of a liquid phase substance which is capable of dissolving intermediate reaction products and/or sulphur forming on the surface of the solid material.
2. (New) The method as claimed in claim 1, wherein said gas is passed at a temperature of 75°C or below.
3. (New) The method as claimed in claim 1, wherein said liquid phase substance is selected from the group consisting of hydrocarbons, carbon disulphide, water, organic acids, inorganic acids, surfactant solutions and mixtures thereof.